

Applicant: Robin Budd, *et al.*  
U.S.S.N.: 09/895,466  
Filing Date: 6/29/2001  
EMC Docket No.: EMC-00-066

**In the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the Application.

**Listing of Claims:**

1. (Previously presented) In a computer system having a plurality of computers, each connected to a storage system, each of said storage systems in communication via an alternate path, each computer having software capable of sending and receiving network information between said computers via a primary network, a method for providing continuous availability of the network information without use of the primary network between respective ones of the computers comprising the steps of:

receiving transmission packets containing said network information into an internal thread of the primary network and placing the transmission packets into a queue determined by the type of transmission packet;

upon determination of the unavailability of the primary network and the determination that the transmission packet is a write packet, copying the transmission packets into a buffer;

upon filling the buffer to a predetermined point, waking the internal thread to process the filled buffer, wherein the internal thread writes the contents of the buffer to the storage system and enables transmission of the stored write packets via said alternate path, said alternate path being implemented as a virtual network interface

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process wherein said stored write packets containing said network information are transmitted in a protocol suitable for said alternate path.

2. (Previously presented) The method according to claim 1, further comprising the step of:

    prior to the internal thread receiving transmission packets, a client thread submits the transmission packets into a write buffer.

3. (Previously presented) The method according to claim 1, further comprising the step of:

    calling, by the client thread, a transport data function, wherein the transmission packets are extracted from the buffer.

4. (Cancelled)

5. (Previously presented) The method according to claim 1, further comprising the steps of:

    configuring the storage system to include a receive volume and a send volume, wherein the contents of the buffer are written to a send volume;  
    copying the contents of the send volume to the receive volume.

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6. (Original) The method according to claim 5, wherein the receive volume and the send volume are respectively located on first and second logical volumes of the storage system.

7. (Cancelled)

8. (Previously presented) The method according to claim 1, further comprising the steps of:

configuring the storage system to include a send volume,

configuring a second storage system to include a receive volume, wherein the second storage system is geographically remote from the storage system;

writing the contents of the buffer to the send volume; and

copying the contents of the send volume to the receive volume.

9. (Original) The method according to claim 8, further comprising the step of: returning the internal thread to a sleep state, after the contents of the buffer are written to the send volume.

10. (Original) The method according to claim 9, wherein the copying of the contents of the send volume to the receive volume occurs upon a command from one of the plurality of computers.

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11. (Previously presented) In a computer system having a plurality of applications, in communication with a storage system, each application having a process capable of sending and receiving information regarding said applications over a primary network to and from the plurality of applications, a method for providing continuous availability of the application information comprising the steps of:

recognizing that the primary network between the applications is unavailable; in response to the unavailability of the network, writing the application network information from one of the applications to a first volume; copying the application network information written to the first volume to a second volume system; reading the application network information from the second volume; and enabling transmission of the application network information via an alternate path between said respective applications, said alternate path being implemented as a virtual network interface process wherein said stored write packets containing said network information are transmitted in a protocol suitable for said alternate path.

12. (Previously presented) The method according to claim 11, wherein the application information is read by the second volume in less than a predetermined period of time after it is written to the first volume.

13. (Previously presented) The method according to claim 11, wherein the plurality of applications performs clustering functions.

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14. (Original) The method according to claim 11, wherein the plurality of applications performs internet browsing functions.

15. (Original) The method according to claim 11, wherein the network is the internet.

16. (Original) The method according to claim 11, further comprising:

    a second storage system geographically remote from the storage system,  
wherein the first volume is on the storage system and the second volume is on the second storage system.